Rendering & Project Management

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PLAYBLAST

- PlayBlast is a short cut to check the time and frame speed of your animation before creating the final animation.
- It doesn't take long because PlayBlast doesn't use the render nodes and its attributes.
- It creates an AVI file that can be opened in Media Player.



PLAYBLAST

Setting Frame Speed

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Rendering Quality

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Rendering Quality

Anti-Aliasing:

- Removes jagged edges.
- Uses supersampling to render images.
- The more samples takes, the slower the render time.

Low-quality Anti-aliasing (left), and production quality anti-aliasing (right)

Anti-Aliasing

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Software vs Hardware Rendering

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Software vs Hardware Rendering

Software

- Uses the CPU
- Produces high-quality images with complex shading networks, including procedural textures and ramps.
- Allows to create more precise results but can take longer to produce each frame or image.

Hardware

- Uses machine's graphic card for computation.
- Batch renders frames more quickly than software rendering.
- Renders specific particle effects not possible through software rendering.
- Uses real-time, Open-GL enabled rendering.

Software vs Hardware Rendering

Render Output

Image Formats:

• Default: Maya Image File Format (IFF)

Most other images fit into one of two other types:

- Bitmap types Defines an image based on individual pixels.
 Examples: TIFF, GIF, BMP, JPG, etc.
- Vector types Defines an image based on lines and curves.
 Examples: SWF, AI, SVG, etc.

Render Output

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Render Output - Channels

While rendering a bitmap type image, each pixel is defined by several channels:

Three color channels:
 o red, blue, and green

Mask/Alpha channel: used to achieve transparency.

 Depth channel can be used to represent how far an object is from the camera.

Render Output - Channels

Batch Rendering

Batch rendering allows you to render a sequence of frames either as individual images, or as a video (ex: .avi).

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Batch rendering progress may be monitored in the script editor.

Close

Render Layers

- A scene in maya may be separated into multiple separately rendered layers. Each layer may consist of any number of shading and rendering elements (color, shadow, material properties, etc.). This has several advantages:
 - Different layers may be rendered and displayed separately. This can be useful for inspecting different image elements.
 - Assigning computationally expensive scene elements (soft shadows, etc) to their own layer allows them to be rendered separately. This can reduce the render time for scene modifications substantially.
 - Potentially easier post processing.

Render Layers - Layer Membership

- All objects and effects are members of the Master Layer. This Master Layer exists for all scenes.
- Objects and effects may be members of any number of layers, anywhere from one layer (Master only), or all layers.

Render Layers

Render Layers

Image Source: http://cg.tutsplus.com/tutorials/autodesk-maya/achieving-realism-and-depth-using-render-layers-in-maya/

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Scale, Rotate, Transform as a Group

Sets

A set is a collection of objects or components.
The set exists as a separate object representing the collection.

- Unlike groups, sets do not alter the hierarchy of the scene.

Partitions

-Collection of Sets with no overlapping members.
Will automatically remove duplicates between sets.
- Create->Sets->Partition

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Templates

Selecting a single object in a complex scene can be difficult.
You can make objects around the desired object unselectable by templating them.

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Templated Object

Display Layers

- Organize objects on separate display layers
- Show channel box/layer editor box
 - Display->UI Elements->channel box/layer editor

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Display Layers

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- Toggle Display Mode
 - Normal
 - Template
 - Reference
- Layer Color

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Display Types

- Normal Displays normally
- Template Cannot select, doesn't render, and cannot snap to
- Reference Cannot select, does render, and can snap to

Copies vs. Instances

Copy

 Common way to make duplicate of objects
 Separate object from the original object

 Instance

A copy of the object that has exactly the same shape as the original (as does any other copy),
but, reflect changes to the original.

 However, changes made to the instance won't have any affect on the original.

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 With the file referencing function, we can assemble multiple objects (such as shading material, and animation, in a scene) into the scene without importing the files.

 The contents in the scene can be read from pre-existing files which are separate and unopened.

 Empowers you with collaborative production in situations where multiple users need to work concurrently by segmenting scenes.

• the child scene becomes a grad child scene file.

Multi-level references

 One method for segmenting various components and levels of display complexity with a complex scene.
 Constructed from the bottom up.

• When applying edits to the referenced objects in the open parent scene, the original referenced child scene is not modified.

Proxy Referencing

- Let you replace one or more file references by a set of possible substitute references (proxies).
- In most case, is used to temporarily simplify complex scene by substituting simpler versions of the objects into the scene.
- By substituting a simple primitive-based proxy version, we can obtain better interactive performance.
- A proxy cannot exist by itself
 can only be created for an existing file reference.

Proxy Referencing

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